

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03F052-PCT	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/015739	International filing date (day/month/year) 09 December 2003 (09.12.2003)	Priority date (day/month/year) 24 December 2002 (24.12.2002)
International Patent Classification (IPC) or national classification and IPC H02M 3/28		
Applicant SANKEN ELECTRIC CO., LTD.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand 24 May 2004 (24.05.2004)	Date of completion of this report 08 February 2005 (08.02.2005)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/015739

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:

international search (under Rules 12.3 and 23.1(b))  
 publication of the international application (under Rule 12.4)  
 international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

The international application as originally filed/furnished

the description:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:

pages \_\_\_\_\_, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (specify): \_\_\_\_\_  
 any table(s) related to sequence listing (specify): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages \_\_\_\_\_  
 the claims, Nos. \_\_\_\_\_  
 the drawings, sheets/figs \_\_\_\_\_  
 the sequence listing (specify): \_\_\_\_\_  
 any table(s) related to sequence listing (specify): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/15739

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-8	YES
	Claims	2, 7	NO
Inventive step (IS)	Claims	1, 3-6, 8	YES
	Claims	1-8	NO
Industrial applicability (IA)	Claims		YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

Document 1: JP, 8-111975, A (Sanken Electric Co., Ltd.), 30 April, 1996 (30.04.96)  
 Document 2: JP, 7-274498, A (Sanken Electric Co., Ltd.), 20 October, 1995 (20.10.95)  
 Document 3: JP, 2002-58239, A (Texas Instruments Japan Ltd.), 22 February, 2002 (22.02.02)  
 Document 4: JP, 2000-139075, A (NEC Corp.), 16 May, 2000 (16.05.00)  
 Document 5: US, 5949226, A (Hirotu Tanaka, et al.), 7 September, 1999 (07.09.99)  
 Document 6: EP, 1102387, A2 (Sanken Electric Co., Ltd.), 23 May, 2001 (23.05.01)

The subject matters of claims 1, 3-6 and 8 do not appear to involve an inventive step in view of documents 1-4 cited in the ISR.

The power supply unit for stopping a power-factor improving circuit when it is considered that a light load state has been reached, described in document 1, and the power circuit for changing the action into a light load mode when a preset time period has passed after finding that a light load state has been reached, described in any one of documents 2-4, belong to technical fields closely related to each other. So, a person skilled in the art could have easily applied the constitution of changing the action into a light load mode when a preset time period has passed after finding that a light load state has been reached, described in any one of documents 2-4, to the power circuit described in document 1.

Furthermore, it is disclosed in document 3 ([0068]) that the means for confirming that a preset time period has passed after finding that a light load state has been reached has hysteresis.

The subject matters of claims 2 and 7 appear to involve an inventive step in view of the documents cited in the ISR.

Documents 1-6 do not describe the constitution, in which the time period after finding that the load has reached a light load state till an action control section stops the action of a live section is preset based on the start time period after start of the live section till the first DC voltage becomes the voltage occurring when the live section acts in a non-light load state. This constitution is not considered to be obvious to a person skilled in the art either.